

Lynne M. Reid, M.D.
Chairman, Department of Pathology
Children's Hospital Medical Center
300 Longwood Avenue
Boston, Massachusetts 02115

The Effects of Irritation and Drugs on Airway Epithelium -- An Experimental Study of Mechanisms.

The airway epithelium, part of the surface of the body, is affected directly by irritants and pollutants. Two aspects of this response are of major importance to human disease -- (1) hypersecretion of mucus accompanied by increase in the number of mucus-secreting cells and (2) disturbance of cell division. These responses can be linked respectively to chronic bronchitis and bronchial carcinoma, two conditions which have been linked to the habit of tobacco smoking.

From an understanding of the normal epithelium, its structure and metabolism, the response to tobacco smoke can be analyzed into those features that are specific to it and those that are common to "irritants" in general.

The use of anti-inflammatory agents has afforded protection against certain of the effects of tobacco smoke.

In this study, rats will inhale freshly-produced tobacco smoke and its effect will be compared with drugs stimulating secretion. The way anti-inflammatory agents and neuromimetic drugs modify the changes produced by tobacco will indicate the mechanisms producing the response to irritation.

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